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D E N T I S T R Y

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Vol. XXV

1955

September

(see back cover)

THE 18th CENTURY

Dear Doctor,

A very enterprising businessman has this hour glass on his office desk.

When a salesman approaches him to tell about his product, he flips the hour glass over and says:

"You now have five minutes to convince me."

Time is also your greatest asset, Doctor. You have only so many hours in each day and, like this businessman, you should carefully allocate them.

Our laboratory can help you save valuable chair time. Through the use of Ticonium, we can construct accurate partial dentures that will eliminate needless time spent fitting and adjusting.

The long life and resiliency of Ticonium clasps and bars will eliminate return visits of patients for service on a restoration.

We are equipped to handle an occasional rush case. We realize they are necessary. However, if those "rush cases" are the exception, you will gain even more.

Take time now to save time — phone us!

Sincerely,

tic

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A MAGAZINE FOR DENTISTS, DENTAL ASSISTANTS, AND DENTAL HYGIENISTS

September 1955, Vol. XIV, No. 9

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Those *Shrinking* Fees

by Harold J. Ashe

Shrinking professional fees are catching up with some dentists. In the months and years ahead this situation may be felt by more dentists unless this can be offset by a growing practice and a determined effort to hold down the mounting costs of maintaining a practice. Even these may prove only partially effective.

What is meant by shrinking fees? Does it mean that charges for professional services are being reduced, dollar-wise? No. The shrinkage in fees comes about because of the increasing costs of keeping a professional office. Stated another way, a dentist's take-home pay, after absorbing all professional costs, is being squeezed, either relatively or absolutely.

Even if a well-established practice continues to grow, this growth may account for less earnings being retained by a dentist than would have been the case in years past. As the practice increases, so do the costs sustained by the practice.

Professional charges which once might have assured a dentist of a fair net return may need to be overhauled in view of the constantly mounting costs of maintaining a practice. Otherwise, there is only one way a dentist can meet these costs—by a reduction in net earnings.

In 1945, the average net earnings for dentists in independent practice equalled 57.1 per cent of average gross receipts. In 1951, the average net earnings had dropped to 55.5 per cent of average gross income. (*) This is the last year for which data is available but the trend is unmistakable. In 1929, the last normal year before the depression, average net earnings amounted to 60 per cent of average gross receipts. While the percentage of average gross receipts available for average net earnings varies from year to year, the overall trend is downward. *The professional costs of practice are mounting faster than are gross receipts.*

Consider, for example, that in 1951 the average gross receipts were $14,085, or an increase of $883 over the average gross receipts of $13,202 for 1950. It would seem that this increase in gross income should be reflected in a substantial increase in net earnings

(*) Source for this and other cited data: Department of Commerce, Office of Business Economics.

Income of Non-Salaried Dentists, 1929 to 1951

Year	Average Gross Income	Average Net Income*	Percent of Gross Income Available for Dentist	Percent of Gross Income for Professional Expenses
1929	$ 7,112	$4,267	60.0%	40.0%
1930	6,814	4,020	59.0%	41.0%
1935	4,438	2,485	53.7%	46.3%
1940	6,592	3,314	50.3%	49.7%
1945	12,115	6,922	57.1%	42.9%
1946	11,429	6,381	55.8%	44.2%
1947	12,032	6,610	54.9%	45.1%
1948	12,703	7,039	55.4%	44.6%
1949	12,881	7,146	55.5%	44.5%
1950	13,202	7,436	56.3%	43.7%
1951	14,085	7,820	55.5%	44.5%

* Net income before payment of income taxes.

on the assumption that many costs of a practice would remain stationary. It didn't work out that way. Net earnings rose only by $384. *Costs rose faster than gross income.*

While in the years between 1929 and 1951 average gross receipts almost doubled, *expressed in nominal dollars,* net earnings failed to double by a wide margin. Again, this is an evidence of the more rapid ascent of professional costs. In 1929 and 1951 average gross income was $7,112 and $14,085 respectively, while average net earnings were $4,267 and $7,820.

In terms of purchasing power, taking into account the then 53-cent dollar, the 1951 net earnings had a comparable value of about $4,145 as against the 1929 average net earnings of $4,267, or a decline in real dollars of equal value of $122. However, this comparison does not take into account income taxation and how it further reduces net earnings. Depending upon the number of dependents and personal deductions, an "average" dentist might have his average net earnings of $7,820 reduced by as much as $1,000 or more for income taxation. Thus, his 1951 net earnings in take-home real dollars might be even more unfavorable, compared with 1929 average net earnings, than earlier indicated.

A dentist who has watched his practice grow appreciably year by year and yet who has not enjoyed a like rise in net earnings may very well give some critical attention to his shrinking professional charges. This may be the deep-seated source of his trouble. Certainly, if gross income of a practice steadily mounts without at least a comparable rise in net earnings there is something fundamentally wrong. In extreme cases, gross income may rise even while net earnings decline or stand still.

There are numerous important items which are now an inescapable part of the cost of maintaining a practice which, only a few years ago, were either negligible or non-existent.

Salaries, too, have risen, often faster than a dentist's charges. Meantime, local taxes and license fees proliferate, serving to reduce net earnings once to be found in established professional charges.

It is sometimes argued that new and added costs of a practice represent, in fact, no added burden for a dentist. These, presumably can be borne with equanimity because of increased gross volume. The assumption is that the greater gross income can readily absorb extra costs besides traditional ones. This is an over-simplification of a complex situation. It ignores the inflationary effects of the past few years and the reluctance of many dentists to increase their charges to old and valued patients.

Raising professional fees, even slightly, may result in enhancing net earnings substantially while not making professional charges prohibitive or building up a bad reaction. For example, reverting to the 1951 "average" dentist, an overall increase in professional charges of 10 per cent would increase net earnings by about 18 per cent, or a dollar increase of $1,408.

Or, if raising professional charges does not seem feasible, a dentist may spend a little time speculating about some of his professional expenses which could stand some pruning. Here again, it is a case of many small, seemingly unimportant, items of expense adding up to substantial amounts and depressing net earnings.

Finally, a dentist might go over his records for a period of years analyzing, year by year, his gross income against his net earnings for those same years. He may be pleasantly surprised to see that net earnings are rising faster than gross income; on the other hand, he may find much in common with the "average" dentist whose net earnings aren't rising as fast as his gross income. With shock, a dentist may even discover that he has to stand on his feet longer now than in the past—and with less materially to show for it.

What's New? This!

by Jo Stephens

In recent months three different patents have been issued on devices for supplying liquid during dental operations. The latest one—No. 2,705,838—has been issued to J. H. Blair of New York, assignor to Chayes Dental Instrument Company of New York.

This invention relates to a water cooling arrangement for a dental drill and more particularly a water-cooled bushing and drill spray for the handpiece of a dental drill.

The purpose of this invention is to provide a dental handpiece with a water-cooling arrangement at the end and a spray from the end of the handpiece to assist in cooling the cutting bit.

An invention for pressing excessive mercury out of amalgam was patented—Patent No. 2,705,368—by Paul J. Tascher of Glen Cove, New York.

The invention is a tool comprised of two arms hinged to each other about an axis near the upper ends, one of the arms having an inner space for insertion of a quantity of amalgam and having a channel extending from the side facing the other arm to an opening of said space. The first-mentioned arm has a solid wall bordering the space opposite the opening, while the other arm has an extension reaching into this channel and movable about the axis toward the wall. Mercury pressed out will flow to the bottom, the first-mentioned arm having lateral projections extending higher than the center of gravity of the tool substantially parallel to the axis whereby this latter arm will remain in a position rising toward the top when the tool is laid on a horizontal surface.

"Heretofore, tools for squeezing amalgam used to press the excessive mercury into the open—mercury vapor mixes with the room air, endangering the health of persons staying in the room for considerable time and also constitutes a waste of valuable mercury."

A Needle-Holder

A needle-holding dental tool has been patented by James B. Giern, of Romeo, Michigan, and John E. Bakke of Detroit—Patent No. 2,690,617.

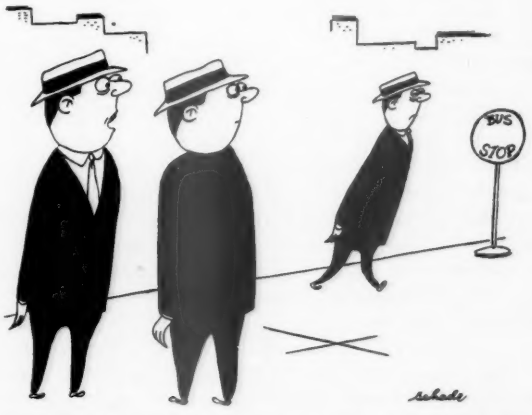
In government language it is described as follows:

"A dental tool for temporarily and reliably holding a steel phonograph needle or the like, said tool comprising an elongated head having an elongated socket therein closed at one end by an end wall, said end wall having a plurality of needle-holding bores there through extending into said socket, said bores being disposed at different angles relatively to the axis of said head, said bores being of substantially the same size and shape as the shank of said needle whereby to rigidly but releasably hold said needle in said head, a magnet disposed in said socket having one end exposed adjacent said end wall and yieldably and releasably engagable with said needle in said bore and an elongated handle having one end seated in said socket—retaining engagement with said magnet."

For Orthodontists

A mounting device for use in orthodontics—Patent No. 2,701,913—has been patented by Victor Lane of New York City.

"In conventional practice when it is desired to change the positions of one or more teeth, metal bands are respectively placed around selected teeth, and brackets are respectively fixed to the respective bands. A wire, which has first been annealed to set it in a selected shape, is then fixed to the brackets. As a result of fixing the wire to the brackets, the wire is bent from its pre-set shape. The wire tends to return to its pre-set shape, and accordingly, exerts a force upon selected teeth to realign their positions.



"HE LOST HIS HEALTH GETTING WEALTHY AND THEN LOST HIS WEALTH TRYING TO GET HEALTHY."

"At periodic intervals, it is necessary to remove the wire from the brackets and re-anneal it to a new selected shape, or else to remove one or more brackets from their associated bands and re-set said brackets upon the bands. In either instance, the re-setting procedure is tedious and must be done extremely accurately in order to avoid physiological damage to the teeth."

Under this patent, the bracket is not attached directly to the band. A strip of metal is provided which exends circumferentially around a portion of the band and is fixed at its respective ends to the band. The length of this strip of metal between its attached ends is slightly greater than the circumferential distance between the points on the band to which the strip is attached. Said strip is sufficiently bendable so that it is possible to bend the strip by means of pliers or the like, although the tension exerted thereon by the aforementioned wire is not nearly sufficient to bend the strip.

Brackets are attached to the respective strips intermediate their ends. The wire is connected to the brackets in the usual manner. When it is desired to reset the wire relative to a tooth, in order to vary the direction of the pull exerted on a tooth by the wire, it is merely necessary to bend the strip slightly. It is not necessary to remove the wire from the bracket and it is not necessary to remove the bracket from the strip.

This is supposed to save time and labor, and less professional skill is required to remove the wire, reanneal the wire, and re-attach the wire to the brackets.

"I'D LIKE TO TAKE THREE OF FOUR MONTHS PAYING OFF MY BILL. OUR VACATION THIS YEAR IS GOING TO BE PRETTY EXPENSIVE."

"YOU THROUGH FOR THE DAY, DOC?"

WANTED: A LONG HARD DAY

I love this patient—just in time—
Thank all my stars!—to save me!
When he is gone, may another climb
Into my chair—to enslave me!

Another and another, all
Bent on work extensive!
(I'll promise them an overhaul
That will not be expensive!)

I'll grind and drill; I'll pull or fill—
I'll even fit a plate,
Just so they exercise my skill
And work me good and late!

Just so they'll give me no time to
Consider stealing out
To confab with a Mountain Blue,
A catfish, or a trout!

I must not be lured past this door
(I wouldn't make it far!)
I see the fate that lies in store
Between me and the car!

I'm faithful to this tooth repair
(And that is worth repeating!)
I'm faithful—yes!—as long as there
Are brooms—and rugs for beating!

Martin Garland

Dental Wives:

WIVES MEET WIVES

by Kay Lipke

Down the street she comes, bright as a button in her new fall suit and cute hat with a feather. Young Mrs. Dentist is on her way to her very first meeting of a dental auxiliary. She has only recently married her dentist and is more than a little proud to have been invited so soon to join the auxiliary connected with his dental society.

She is also a little scared. She knows practically none of the women in the auxiliary, and is terrified at meeting all those dental wives. Furthermore, her husband has not been too enthusiastic about her joining the auxiliary in the first place. He has a masculine reluctance to have his wife become aggressively active in anything concerning his profession. He likes her just the way she is, wide-eyed, eager—and uninformed.

The big hotel looms in front of her and she turns in, sees a placard pointing to a room at the left, and suddenly finds herself in the midst of a gay group of women, all in their best autumn attire, and having a wonderful time greeting each other after the long summer vacation.

She feels alone and strange, and left out. But not for long. A charming young woman descends upon her with a smile. "I am Myrtle Wheeler, and I have a feeling you must be one of our new members."

Young Mrs. Dentist brightens and gives her name. In a minute she finds herself with a little badge attached to her bosom with her name neatly printed for all to see. She is introduced right and left to other dental wives, and begins to feel at home. One very attractive woman explains that she knows her husband well, and tells an amusing story about him and her own husband when they were fraternity brothers in dental college.

Next comes luncheon and a good one. Mrs. Dentist is now quite at ease with her table mates, right and left and in front of her. She is having a wonderful time when the sound of a gavel is heard, and the business meeting begins. She likes the president and the way she talks. Especially, she admires her hat, an important fact with all women.

There are several reports, and young Mrs. Dentist is impressed. She learns that during Dental Health Week in the city, the members of the auxiliary took an important part in the activities, and an enormous number of toothbrushes were purchased and distributed in the schools through the P.T.A., several hundreds of dollars were given to the scholarship fund of the local dental college, and necessary equipment had been purchased for the dental clinic for underprivileged children, in which the auxiliary takes an active financial interest. Furthermore, there is an impressive amount of money left in the treasury.

Color pictures are shown of a recent national dental convention, and young Mrs. Dentist is excited to know how much fun dentists and their wives can have by attending these national affairs together. She makes a mental note gently to suggest to her husband that perhaps in a year or two, or three, (budget permitting), they, too, can join the fun on these cross-country treks.

A slip of paper is passed around with a list of activities for the year to come, and members are asked to check the work they feel best qualified to participate in. After a moment's hesitation, Mrs. Dentist puts down her name after one of the committees and feels suddenly a part of the auxiliary.

That night, on his return from the office, Mrs. Dentist gives an enthusiastic report of the afternoon's activities to her dental husband. She mentions the women she has just met and finds her dentist knows many of the husbands, and one or two of them are good friends of his professionally. He sits back in his easy chair and laughingly relates a few anecdotes of his dental college days.

Her husband's profession suddenly becomes a very personal thing to her as he opens up to her and begins to talk dentistry as if he thought she was capable of understanding what he was talking about. Suddenly, dentistry ceases to be an alien world to her, and she feels much closer to her dentist as a result. She realizes that her membership in a dental auxiliary is going to be a bond helping to unite them with a mutual interest.

After attending a single meeting of dental wives, she has discovered one of the principal advantages of joining a dental auxiliary and, as time goes on, she will discover many many more.

WHO KNOWS?

The nation owes its oral health,
To dentists and technicians;
Together they might even rid
Us of our inhibitions.

Ethel Willis Hewitt

A New Look for Your Office

by Dona Z. Meilach

This dirty, scuffed, green leather pull-up chair is being given new life quickly with a coat of white. Dirt and grime cannot embed in the leather.

If the leather on your office furniture looks worn and old, you can renew it quickly with a new flexible paint—Ramcote. The way this amazing product brings new beauty to shabby and soiled leather-covered chairs, stools, desk tops, and reception-room furniture is truly remarkable. And more remarkable is that you can do it yourself and the furniture will be ready for use in two to three hours.

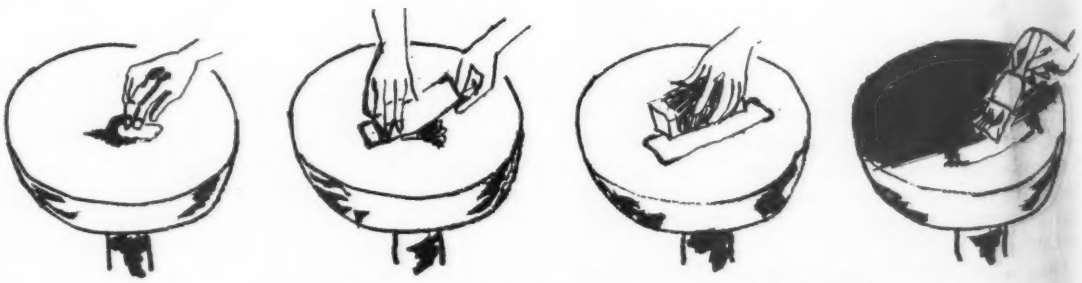
Ramcote is applied like regular paint but, because it is flexible, it will give without cracking or peeling when applied to leather, leatherette, and canvas. It contains a certain plasticizer that replaces the natural oils in dried-out leather and the castor oil in leatherette. One great advantage is that it dries rapidly. Also, it is so easily applied. Put a coating on that old dental chair tonight and tomorrow your patients will think you have new equipment.

After drying, this paint is as durable and flexible as the original leather. It resists mildew, alkalies, heat, cold, salt air, and alcohol. It is washable. What's more, one color can be applied over another, so you can change the color scheme of your furniture as often as you like.

If some of your furniture is made of the newer plastic fabrics such as Duran, Naugahyde, Koroseal, and so forth, you can obtain a sister product to renew these finishes.

There's no trick or skill required to use the paint. If the leather is badly scuffed, it is first sealed. This is done with a special sealer, which stops absorption of porous surfaces and forms a tough, permanent base for the flexible paint. The sealer is sanded lightly before the paint is applied, two coats being recommended. As it requires only about a half hour for each coat to dry, the whole process will take only an hour and a half.

You will also find this new product a blessing for worn-out household goods such as suitcases, leather furniture, briefcases, shoes, handbags, belts, golfbags, hassocks, and so forth. Try it on an old, badly scuffed briefcase you wouldn't be seen with. Change it to your favorite color and you'll have a smart item that looks and wears like new. A wide range of base colors can be mixed to give you almost any shade you desire.



This sequence shows how a rip or hole may be easily patched:

(1) Clean the spot with cleaning fluid and stuff cotton in the hole;

(2) an adhesive tape patch with corners rounded is placed over tear then coated with two coats of the sealer;

(3) after sealer dries, sand the spot; and

(4) cover with two coats of paint and you'll have to look closely to detect the patch.

Partially painted suitcase and portfolio show what can be done to renew badly scuffed and worn leather.

Flexible paint will make the chairs above and below look newly upholstered for less than a tenth of the cost.

If a chair has a cigarette burn or rip in the leather, a simple patch can be made and painted over so it will barely show. A bottle of Ramcote costs under a dollar and is probably available in your paint or hardware store.

DENTAL VERSE

Patience

Webster gives at patient credit
Greater than is rightly his;
Never was there patient patient
As the patient dentist is.

—Frank M. Arouet

OK, OK!

The dentist scales no mountain peaks,
A crevice, not crevasse, he seeks
With his explorer, and eschews
A climb to prominence on K-2's.

He gains no fame for his unfailing
Skill and labor—all his scaling
Is done on teeth like yours and mine:
Insisor molar and K-9!

—Barbara Becker

Dentist's Holiday

When lawyers take a holiday
They won't discuss a suit;

Musicians at resorts refuse
To give one "off-stand" toot.

And when a physician takes time off
From surgery and pills

He won't play golf or cribbage with
A guy who airs his ills.

But dentists are a group apart;
No matter where they while

Away their short vacation days,
The people smile, smile, smile.

—Nancy Talbert

A Pictorial History:

The Eighteenth Century

(The ninth article in a series)

by Curt Proskauer, D.M.D.

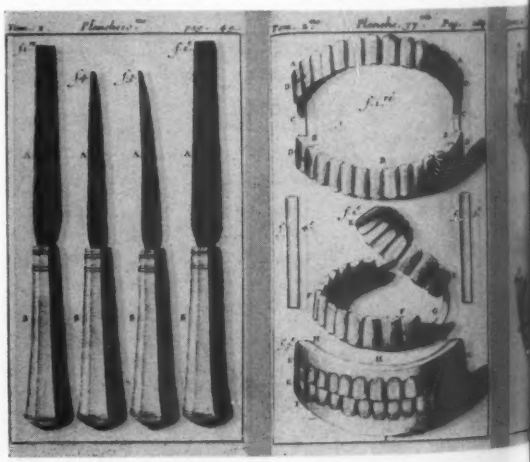
The eighteenth century brought a new era of dentistry to Europe, especially France, the center of culture at that time.

In the last year of the seventeenth century King Louis XIV of France issued an edict creating the profession of the *chirurgien-dentistes* as a subdivision to that of the surgeons, with the provision that those who wished to become *chirurgien-dentistes* must pass an examination. This edict did not mean, as many may believe, that from that moment on anyone in France who extracted or treated teeth or made dentures had to take the examination and become a *chirurgien-dentiste,* a kind of equivalent of our oral surgeon or dentist. Not at all. The edict which aimed at straightening out a confused situation for the future applied only to bona fide surgeons who were already specializing in the branch of surgery we would call dentistry today, or to those who wished to start their dental practice after promulgation of the edict and hence must comply with its regulations.

But besides these two groups there still remains all the dubious experts who had been "practicing dentistry"—the tooth-pullers, the itinerant toothdrawers, the plain fakers, the charlatans.

As time went on a new dental profession took form. Dental literature also changed radically. In preceding centuries physicians and surgeons had given dentistry a few superficial chapters in their works, mostly references to earlier authors, whom they quoted without firsthand practical experience of their own. From now on medical authors, especially those who practiced dentistry, wrote books on the field, giving detailed accounts of their own experience. Many specifically dental books, with and without illustrations of instruments, apparatuses, methods, and prosthetic devices were published dur-

Title page



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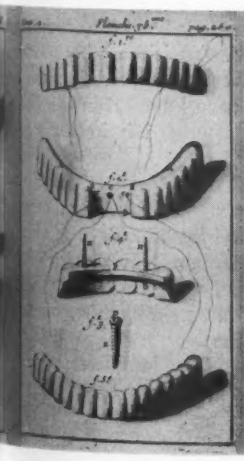
Upper and lower full denture.

ing this century; the most important and most famous, by the Paris surgeon Pierre Fauchard, appeared in 1728. This well illustrated work in two volumes, *Le Chirurgien Dentiste ou Traité des Dents* created a kind of sensation; in the field of dentistry it was as epoch-making as Vesalius' in the field of anatomy. Fauchard's textbook not only covered the material published before his time, but added very clear and useful descriptions of new instruments and procedures Fauchard himself had used in his dental practice. He made known all methods of treatment developed during long years of practical experience, thus for the first time abandoning the customary secrecy with regard to improved treatments and tools.

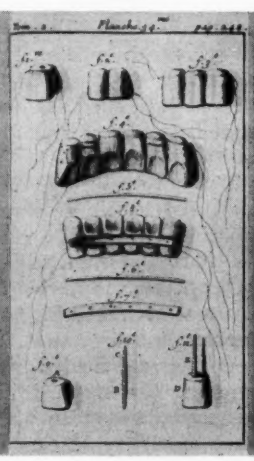
In addition to the anatomy and pathology of mouth and teeth he gives a detailed, lucid description of many instruments used to remove tartar from the teeth, to file and excavate carious teeth; to fill and cauterize teeth; he also describes several extracting instruments, among these a new kind of "pelican" which he designed as something safer than the then highly popular instrument. Fauchard explains how to fasten loose teeth and how to correct "twisted and badly arranged teeth," how "leg bones of oxen are to be bleached for use" and shaped into artificial teeth to replace natural ones. He gives advice as to "what must be observed in artificial dentures whole or partial in piercing, placing and attaching them to natural teeth" and tells how to construct "a complete upper denture fitted with springs to a piece of gold or silver which encircles by means of two half circles and two loops the teeth of the lower jaw." Where an upper and lower full denture is necessary, he adjusts the upper denture "to the lower by means of springs," constructing the upper denture exactly like the lower one without a palate. He is the first "to enamel the teeth or artificial dentures to make them more regular and pleasing." He tries "to imitate nature and even to improve upon it by these artificial dentures so far as the ornament of the mouth is concerned." He believes he has "succeeded not only in imitating the most perfect enamel of the teeth but even the natural colour of the gums where it is necessary to replace them in whole or in part." He states that he consulted "the most skillful enamellers" so that he could "put into practice what no other has been able to do up to the present. Eyes have been imitated by eyes composed of enamel, but the same application to the teeth has been neglected, when substitutes for lost teeth have been made." To this end he made animal bones the basis of the denture, fitted it "to the place in the jaw for which it is designed according to all the requisite dimensions," without shaping any teeth, then fitted to "the outside of the piece a strip of gold or silver" extending over the part of the denture which was to show the artificial teeth. After tracing with a file "the shape of the teeth on the strip to mark the space between the teeth to be formed," he sent the strip, together with a natural tooth of the right color, "to the enameller to cover the strip with enamel." After enameling, the strip was fixed with screws to the basis of the denture. "The advantages of enamel for artificial dentures," says Fauchard, "are not confined to ornament, but dentures or enamelled teeth last a very considerable time because enamel is not susceptible to change."

This last observation, that dentures of animal bone or hippopotamus ivory were subject to decay and acquired a very disagreable odor, led to the invention of artificial teeth half a century later.

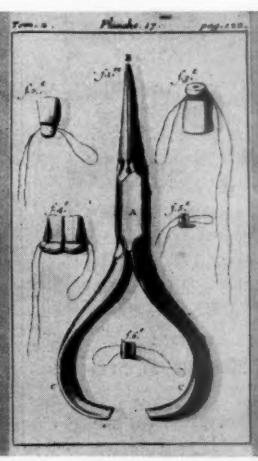
Also attaching teeth.



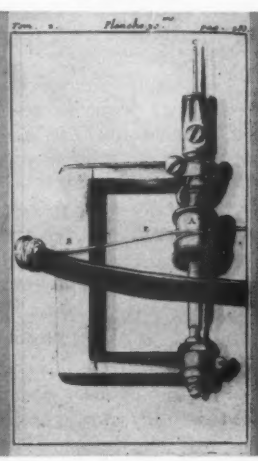
Attaching artificial teeth.



For piercing artificial teeth.



For carving artificial teeth.



A "pelican."

Operative Dentistry:

Gold Cast Inlay

(The tenth installment in a series)

by Arthur H. Levine, D.D.S.

When should an inlay be used? What goes through the dentist's mind when he is faced with this decision? Each case, of course, has its own special problems. Other factors play a part, too, such as the dentist's training, the type of dentistry he practices, the income levels of his patients, and personal prejudice.

Only at the door of personal prejudice can we lay the responsibility for some of the extremes concerning gold inlays that are found in practice today. Some men insist on using a gold inlay in every case. Some gold inlays in class one cavities are so small that it must have strained the skill and ingenuity of the operator merely to cast them.

Yet there are others who resort to the most complicated of amalgam restorations just to avoid the gold inlay. Three-quarter crowns and even full crowns which seem to defy the laws of mechanics have been fashioned out of amalgam. The fact that these extremes work (and they do work in some instances) is no reason to violate the principles of sound practice. And sound practice indicates that in certain circumstances a gold inlay is indicated.

Indications for Gold Inlay

Here are indications for the gold inlay: [1]

1. For restoration of large, abraded surfaces where application and retention of gold foil would be difficult.
2. As a substitute for the crown in badly broken down posterior teeth. Here, the cast crown, a crown made by casting gold as an inlay, may be considered superior to the shell crown when the entire tooth must be covered.
3. As a time saver to operator and patient through the reduction of chair time.
4. In cavities with sub-gingival margins and where prolonged exclusion of moisture is impossible.
5. In teeth relatively immune to caries.
6. In large proximo-occlusal or MOD cavities, difficult of access.
7. In invalid, young, or old patients, unable to bear prolonged operations.
8. In teeth with weakened periodontal membranes.
9. As abutment for bridge work.

Some explanation is in order for number 5, "In teeth relatively immune to caries." The author means that the work and expense involved in making an inlay for teeth relatively free from decay is justified, since a long life for the restoration is fairly certain. But in a mouth in which decay seems to be the rule rather than the exception, no matter how well the work is done, it seems a shame to expose the patient to the treatment and expense of an inlay, knowing in advance that the inlay is doomed to failure.

Again from the same source, here are contraindications for use of the gold inlay:

> Gold inlays are, as a rule, contraindicated in small cavities, shallow cavities, and proximal cavities on anterior teeth not involving the angle unless these latter are large and the lingual wall is lost, thus allowing ready withdrawal of the wax model and insertion of the inlay from the lingual aspect. Even here a gold foil restoration will be better. Following the introduction of the gold inlay and the silicate cement, the use of cohesive gold as a restoration material rapidly diminished. Now it is surely returning to the place it justly deserves, since the silicate cement has proved a failure as a tooth preservative and the gold inlay has fallen somewhat short of the expectations of many who so loudly proclaimed its virtues. However, there are still many conditions which justify the use of both, and the gold-building operation far exceeds all others in the college clinic for developing technical skill and manipulative ability.

Direct Versus Indirect Technique

The most controversial area in the entire field of gold inlay fabrication is the direct versus the indirect technique. The discussion has been going on for years with outstanding authorities on both sides of the fence willing to wager anything that their method is the best. Other men have taken the best from both camps and incorporated it in a direct-indirect technique.

The only valid appraisal that all this discussion leads to is that a satisfactory inlay is a satisfactory inlay, no matter what method is used. Each method has advantages and disadvantages. It remains for each operator to decide for himself which method best lends itself to his handling. A dentist, for instance, who is by nature impatient and who dislikes working in a difficult position for a long time, would be doing himself an injustice with a direct three-quarter crown on an upper second molar. On the other hand, even a man who likes to work directly

with wax would be straining himself unduly just to demonstrate that he carves a full cast crown by the direct method.

The one great problem in making restorations outside the mouth is distortion. The direct pattern technique, the indirect modeling compound technique, and the indirect hydrocolloid technique, are excellent only to the degree in which they avoid distortion.

Theorectically, it would seem that the direct pattern would be the method of choice since it does away completely with the intervening step of creating a model of the tooth and cavity. In addition, it avoids the other distortions involved by pressing a copper band filled with modeling compound over a bell-shaped tooth. But even a direct pattern can be distorted in its removal, particularly if it is large and two- or three-surfaced.

The essence of success, therefore, lies, not in any particular technique or combinations of techniques, but in the use of any method with special attention on eliminating distortion.

In the direct technique, a compound cavity or even a large occlusal cavity will frequently produce a pattern that does not lend itself to simple removal with an explorer. Inlay wax in the mouth will bend considerably before breaking. Removing a class two pattern from a molar, for instance, by placing an explorer near the interproximal part may cause a distortion at the occlusal dovetail.

In the case of an MOD it is almost impossible to remove a direct pattern with a single instrument. Most men bend a paper clip into a inverted U, heat both ends, and place it in the wax. This gives rigidity to the pattern and applies the removing force equally to both ends where it is needed.

The bent clip cannot be used as the sprue and, hence, must be removed. While the wax pattern is lying on the bracket table with the bent clip still attached, pliers are placed in the bunsen flame and then held against the clip. Care must be taken not to touch the wax pattern with the heated pliers. The pliers may have to be heated a few times before enough heat passes to the bent clip to afford easy removal.

The wax pattern is now free of the bent clip. A conventional sprue is attached and the two small holes left by the removal of the bent clip can be smoothed over with a small warm spatula.

The same technique can be used in a large one-surfaced or two-surfaced wax pattern that might have a tendency to bend if pulled from one point.

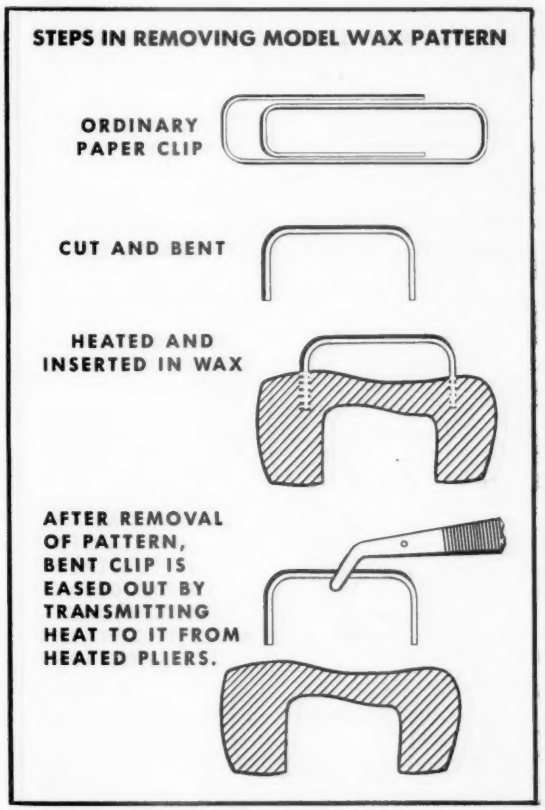
Another source of distortion in the direct technique is the gingival overhang. Some teeth taper sharply beyond the gingival margin. If the wax is not trimmed with great care a gingival overhang may result. This would not be serious if the root were a perfect cylinder. But usually the sides of the root narrow at that point. Withdrawal of the pattern with a gingival overhang, therefore, causes the gingival wax to swing out a little to get past the wide part. This results in a distorted pattern.

Another distortion in the direct technique occurs when a pattern is not invested immediately. Doctor S. D. Tylman states it as follows:[2]

> Most patterns that are not invested immediately upon their removal from the cavity show distortion after forty-five minutes. The longer the pattern is allowed to stand at room temperature, the greater will be the amount of distortion taking place. This will be more so if the room temperature is high. The distortion is due to the release of the internal stresses. If permitted to stand for a sufficiently long time, all the stresses will be released but the pattern will be ruined, so far as accuracy of fit is concerned.

Doctor Tylman also feels that, once a pattern is removed, it should not be touched with a hot instrument; nor should it have any wax added to it.

In the indirect method with modeling compound the greatest source of distortion lies in the copper


STEPS IN REMOVING MODEL WAX PATTERN
ORDINARY PAPER CLIP
CUT AND BENT
HEATED AND INSERTED IN WAX
AFTER REMOVAL OF PATTERN, BENT CLIP IS EASED OUT BY TRANSMITTING HEAT TO IT FROM HEATED PLIERS.

band impression. Once having obtained an accurate impression, a dentist can guarantee himself a perfect casting. But getting an accurate impression is not easy.

When a copper band filled with softened modeling compound is pressed into position in order to get an impression for an inlay involving a gingival margin, it is inevitable that the compound will cover areas beyond the cavity. Since most teeth are bell-shaped, the hardened material in this position constitutes an undercut.

The first step, therefore, in avoiding distortion is a copper band that is properly fitted and contoured. This calls for more time and care than some dentists are willing to spend. But proper attention paid to this point, no matter how tedious, will pay dividends later. The ideal band will carry compound just to the gingival margin but not enough beyond it to create an undercut. And it will be so shaped that all unnecessary compound that might lock around the bell of the tooth can easily be removed.

Another source of trouble in the indirect technique is the distortion that comes from removing the copper band impression. Ideally, the band should be pulled straight off without rocking. Some orthodontists use an instrument for doing just that. But in general practice most dentists like to do it digitally. They have developed a perception through their fingers which tells them just how much pressure they must exert. But when resistance is met, it is almost inevitable that the operator will try to dislodge the band with a slight rocking motion. This will cause distortion.

"COULD YOU STRETCH OUT HIS TREATMENTS UNTIL SCHOOL STARTS? IT GETS HIM OUT OF MY HAIR A COUPLE HOURS A WEEK."

Doctor A. B. Gabel [3] states: "Theoretically, while it would seem impossible to dislodge a rigid structure such as impression compound with its confining tube from the tooth without distortion, clinically, excellent results are nevertheless demonstrable when this indirect system is used."

He feels that it is impossible to get perfect adaptation against the tooth walls. In addition, there is a layer of saliva separating the material from the tooth. These factors create just enough space so that a slight amount of tipping which carries the gingival margin away from the tooth helps dislodge the band without doing too much harm. The fact still remains, however, that the ideal movement is the one that carries the band straight off. Any deviation from that is a compromise.

In the direct-indirect system, the pattern which is carved on a model is checked on the tooth itself. Minor discrepancies in the model can be corrected by adapting the wax to the tooth. This lends itself in cases in which the pattern is so large or complicated that direct work would be difficult. The one disadvantage is that the adaptation of the wax against the cavity walls is not as tight as a direct pattern. In a short tooth acting as an abutment, in which maximum retention is essential, this difference in adaptation might be critical.

The indirect system employing hydrocolloid is helpful in areas involving more than one inlay, or in fixed bridgework. The technique today is well-established and the results are good. There are two disadvantages which must be overcome to achieve a good result. One is the displacement of the gingival tissue. Unlike compound the hydrocolloid material will not push back the gingiva. If the cavity margin, therefore, lies beneath the gingiva, steps must be taken prior to the impression-taking to displace the gingiva.

The other disadvantage is the difficulty in getting the material to run into small areas such as grooves or pits. Carrying some of the material into the small areas first with a fine syringe will help in such cases.

The indestructibility of cast gold makes it the best restorative material we have today. But the steps involved in making it are many and complex. As a result, there is much more room for error. The best inlay is the one that fits the tooth perfectly in all areas. Any method or combination of methods which will accomplish this is the method of choice.

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FOR LIVING

Dr. J. R. Schwartz's Ideal Career

The second and concluding article

by Joseph George Strack

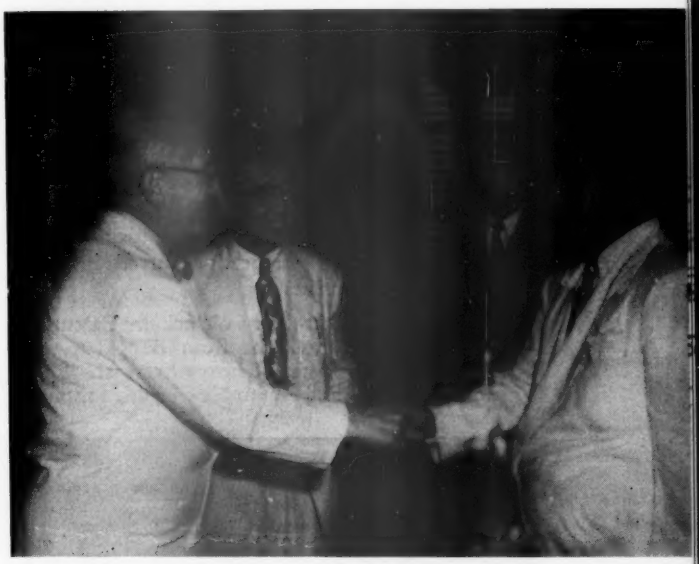
In the first article in this series, Doctor J. R. Schwartz, lecturer in dentistry in forty-four countries, gave an anecdote about his meeting with Nehru, leader of India. In this installment he describes a visit he had with the then President of the Philippines, Elpidio Quirino:

We arrived from Singapore on a Thursday afternoon. A delegation from the Federation of Dental Practitioners of the Philippines met us at the airport. At the customs counter they took over and saw us quickly through.

Outside, my wife and I were met by a larger group, who gave us a really royal welcome. Flashlights were popping from all sides. Reporters buttonholed us, asking for comments. Welcoming leis were hung about our necks. It was overwhelming.

We were escorted to a lead car, followed by ten others and at the head of the motorcade was an escort of motorcycle police. From the airport to Manila is a considerable distance, and all along the way we saw groups of people lining the road.

At the Manila Hotel we were again greeted by officials and reporters, and more pictures were taken while the motorcycles kept going round and round the circular driveway. I found it intriguing to have such a reception. One would think I were a visiting dignitary instead of just a dentist who had to do a job of trying to help my fellow practitioners. What really flabbergasted me, however, was this: the lobby of the hotel had a number of placards carrying my picture and an announcement of what I was to do! The next day we were taken on a tour of the city and in many places I saw my picture staring back at me. And then I was told that arrangements had been made for us to visit President Quirino at the Palencon the following morning. All of us, dressed in white, arrived at the Palace about ten o'clock. Escorted by uniformed aides, we were led to the President's chambers, an ornate and impressive room.



Doctor Schwartz meets President Quirino of the Philippines. Next to Doctor Schwartz is Doctor Vergel de Dios, then president of the Federation of Dental Practitioners of the Philippines.

We were received by Quirino, who expressed his pleasure at the purpose of our visit and, to my surprise, delved into the subject of dental service, which he said was greatly needed by his people.

With Philippine independence only recently acquired, he explained that he was grateful of assistance in every field that would advance the welfare of his people, especially their health,

and knew that dental service was of great importance.

We stayed for an official luncheon and, before parting, we heard from the President again on dentistry. "Proper organization," he said, "is the key to the harmony of function. Here in the Philippines we have two national organizations. At times they are at odds on principle and method. A situation such as this is unhealthy. I know that you in the United States are well organized, not only in dentistry but in all the other professions and callings. I would be more than pleased if you would be kind enough to meet with the heads of our organizations and effect a conciliation and merger of the two."

I was flattered by the suggestion, difficult as was the task involved.

We stayed about five weeks in the Philippines, during which time we flew to several of the islands, where, along with my work, I spoke of unity of effort. Every now and then I receive mail from the Islands. From one of these letters I was gratified to learn that, at long last, there is to be a merger and the Philippines are to have one national organization.

A Coincidence

Probably one of the most amusing incidents Doctor Schwartz has experienced occurred in India. Here is how he describes it:

> Arriving at eight-thirty o'clock in Calcutta one morning on a flight from Bangkok, we couldn't land because of heavy overcast. The captain decided to fly on to New Delhi, a thousand miles north. About midway—at Allahabad—he made a forced landing. We had run out of gasoline. The officials at the airport raised a howl because of the unscheduled landing. The captain's request for gas was refused. He radioed to the TWA office in Calcutta. After almost two hours of wrangling and official intervention, we finally got 300 gallons of gasoline.
>
> We went on to New Delhi. While I was going through customs, it was noted that my name was Schwartz. When I opened my case carrying my teaching models it was observed that many of the models had gold constructions. The chief of customs was called hurriedly. After a lot of questioning, I was held for further examination and had to answer many more questions. At the C.I.D. I had to fill out a very large form. My case was impounded.
>
> The explanation: The officials were looking for a gold smuggling gang. One of the gang was named Jacob Schwartz!
>
> That same evening I had a lecture date in Calcutta. I had to get my case of models back in bond. According to the C.I.D., I was told to report back to New Delhi.
>
> I felt the TWA office might get me out of this mess. I called upon the manager and showed him all my credentials. "I see you're a dentist," he said. "You know my father also is a dentist. He practices in New York."
>
> "What did you say your name was?" I asked him. "Knapp," he said, "Say, your dad wouldn't by chance be Karl Knapp, would he?" I asked. "He sure is!" he blurted out. "How do you come to know him?" "Well," I an-

With the leaders of Philippine dentistry

swered, "back in 1921, I first met him in Minneapolis in my cousin's dental office and from that time on we've been friends. I don't know if you remember, but I was the one who brought your dad to New York for lecture dates and had him stay at our home for the duration."

It was certainly something to go half way around the world and meet up with the son of an old friend!

He went into quick action. He called for his aide, his driver, and a car—and off we went directly to the Chief of C.I.D. There young Knapp got into a huddle with him, I watched the Chief of C.I.D. take the long questionnaire and tear it into pieces. Instead of that form, I received a small identification card that was to take me through all lines during my whole stay in India.

With such a background of international cooperation it is not surprising to learn that Doctor Schwartz is executive vice-president of the One World Award Committee. "If you travel about the world long enough you recognize that this is in fact one world, must be one world," he says. "Such traveling helps you to recognize and respect the individual, to have reverence for the human personality, as Henry Churchill King advocated. You see people as the individuals they really are, not as whites or blacks or yellows, not as waiters or machinists or members of your family. When you get to that stage of understanding and respecting and loving people, you develop what must be a God's-eye view of all human nature. You begin to realize that nothing that is human can be alien to you."

Nor is it anything but logical for him to have served, for seventeen years thus far, as a member of an advisory council for the New York City Board of Education's vocational high school system. This group is in charge of a dental technique training program. Commenting upon this civic service and upon his work with dental groups, Doctor Schwartz explains: "Every one of us owes something to the oncoming generations, something of ourselves, something we have taken from the experience of those who preceded us here. The generations that came before us made life a bit more enjoyable for us, developed our profession to the level at which we found it. The least we can do is to repay this in kind—to those whose destiny it is to replace us. Thus some part of us will continue to go on living long after we have gone."

Last January Doctor Schwartz had a one-man show at the Ward Eggleston Galleries in New York City, where his paintings, drawings, etchings, and sculpture were shown. Last year his work was exhibited at Minneapolis, the city of his birth, at the Minneapolis Institute of Art. Exhibits of his ivory carvings have been held in Detroit and in Atlanta, Georgia; and at the American Museum of Natural History in New York City, in the Hobbies for Older People show, sponsored by the Health and Welfare Council of New York City.

Conducting a dental clinic at New Delhi

Dentists Three

In 1941 and 1942 Doctor Schwartz realized one of his fondest hopes: In 1941 his son Martin received his dental degree from the Western Reserve School of Dentistry and joined his father in practice, and the following year his other son, Gilbert graduated from his father's alma mater and joined them in practice. Both of the younger men served as captains in the U. S. Army Dental Corps for three years during World War II.

Upon their return to private practice, the elder Schwartz extended his roles of lecturer in dentistry, traveler, writer, and artist—earning increased international recognition.

"I believe my life is exactly as I want it," he says, not boastfully, but gratefully counting his blessings. "I enjoy practicing dentistry, lecturing, writing, traveling, doing artistic work, and playing with my five grandchildren. (These are children of Martin, Gilbert, and my daughter, Helen Carol.) I am not at all overworked, nor am I otherwise overburdened. I have no feeling of pressure, no tensions. Perhaps it is because I find so much enjoyment in doing these things. For example, in addition to everything else, I have just agreed to prepare a series of illustrated articles on acrylic jacket crowns and bridgework, specifically aimed at dental technicians, for *Dental Laboratory Review*.

"If life has taught me anything, it is this: the average person uses only a small fraction of his energy, abilities, and talents. That has been said before, again and again, I know. But let me repeat it, after sixty-five years of busy, happy bouncing around this wonderful world of ours. I can truthfully say to any man who is not getting a big boot out of life. 'Friend, it's your fault; you're just not doing enough of the things that are "right" for you.' "

ANGLES AND IMPRESSIONS

by Maurice J. Teitelbaum, D.D.S.

Inci-dentals

A woman in Illinois sued a dentist for $50,000 because, she said, he drilled the wrong tooth, it broke, and she lost the tooth, causing her a deformity. At $50,000 per tooth the plaintiff must have had a million-dollar smile. Just wondering, however, if she would have been glad to pay a measly $500 for the replacement of one tooth if she had lost it through no fault of the dentist . . . Now is the time to sign up for those postgraduate dental courses you have been meaning to take since last fall. There's a point you can pick up from every lecturer, but unfortunately some lecturers are like Texan long-horns —there's a point here and a point there but there's just too much bull in between . . . . In this year's most recent poll to determine dentists' hobbies, the same four favorites have remained on top: Fishing and hunting, gardening, photography, and golf.

"NEXT . . ."

Tic Tips

Now that the summer is past and you are back at work on your regular schedule have you noticed how tired your feet have begun to feel? If you are having trouble with your feet, here are some exercises recommended by the physical education staff at the University of California:

1. This exercise can be done while relaxing in your easy chair in the evening reading your paper or watching television. With the legs on a footstool, stretch and separate the toes as far as possible. Then grab with the toes, as if attempting to hold something tightly. Do this until the feet start to tire.

2. The second exercise requires standing behind a chair with the hands resting on its back. Place the feet with the big toes together and heels three or four inches apart. Keeping the balls of the feet flat, bend the knees just slightly, rotating them outward as far as possible without moving heels or toes. Repeat five or ten times.

3. The third exercise requires walking forward slowly and naturally ten to fifteen steps. just before each foot makes contact with the floor, turn the front part of the foot inward as far as possible—pigeon-toe manner.

If you practice these exercises just once a day, you will strengthen your foot muscles and reduce fatigue, the Y.C.L.A. physical instructors say.

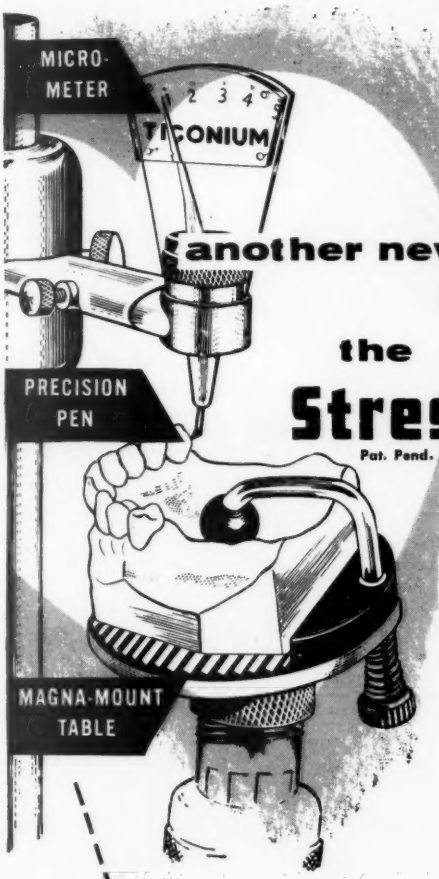
Gagging

Conversation Piece

Dentist: Open please (*Places saliva ejector, mirror, two hands and bur whirling under a spray of water into the patient's mouth*). How does the tooth feel?
Patient: Ugle . . . glurgle . . .
Dentist: Good. I haven't seen you at the club lately, been playing golf?
Patient: Glush . . . siss . . . urgle.
Dentist: What did you shoot?
Patient: Glog . . . pargle . . . og . . .
Dentist: That's good. I still seem to have trouble with the 7th hole. How do you play that hill?
Patient: Sglish . . . sssss . . . gishup.
Dentist: I'll try it that way. How about Sunday morning?
Patient: Efle . . . ergle . . . gloog.
Dentist: (*Takes everything out of patient's mouth*) Rinse. Fine, I'll meet you at eight o'clock.
Patient: I said a quarter to eight.
Dentist: Oh—I didn't hear you.

* * *

Overheard at a dental meeting: "My patient had so many cavities that he talked with an echo."



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In a style reminiscent of Cruikshank and Dickens, our cover caricature takes us back to the "early days" of modern dentistry.

It is inconceivable to many of us that dentistry, surgery and medicine were all once so crudely administered. Yet even then, the professions were searching, always seeking better methods, better equipment and techniques to prevent disease and to cure those already stricken.

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